FIG. 1

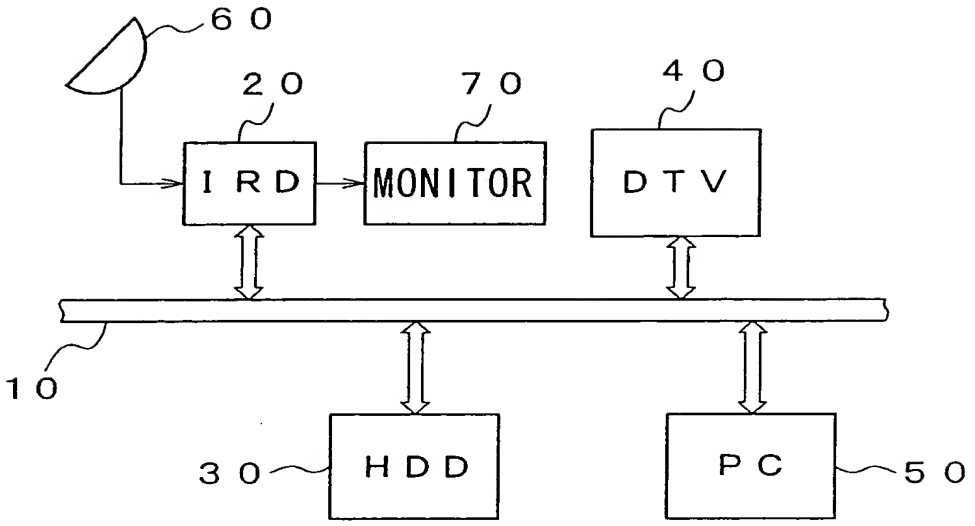


FIG. 2

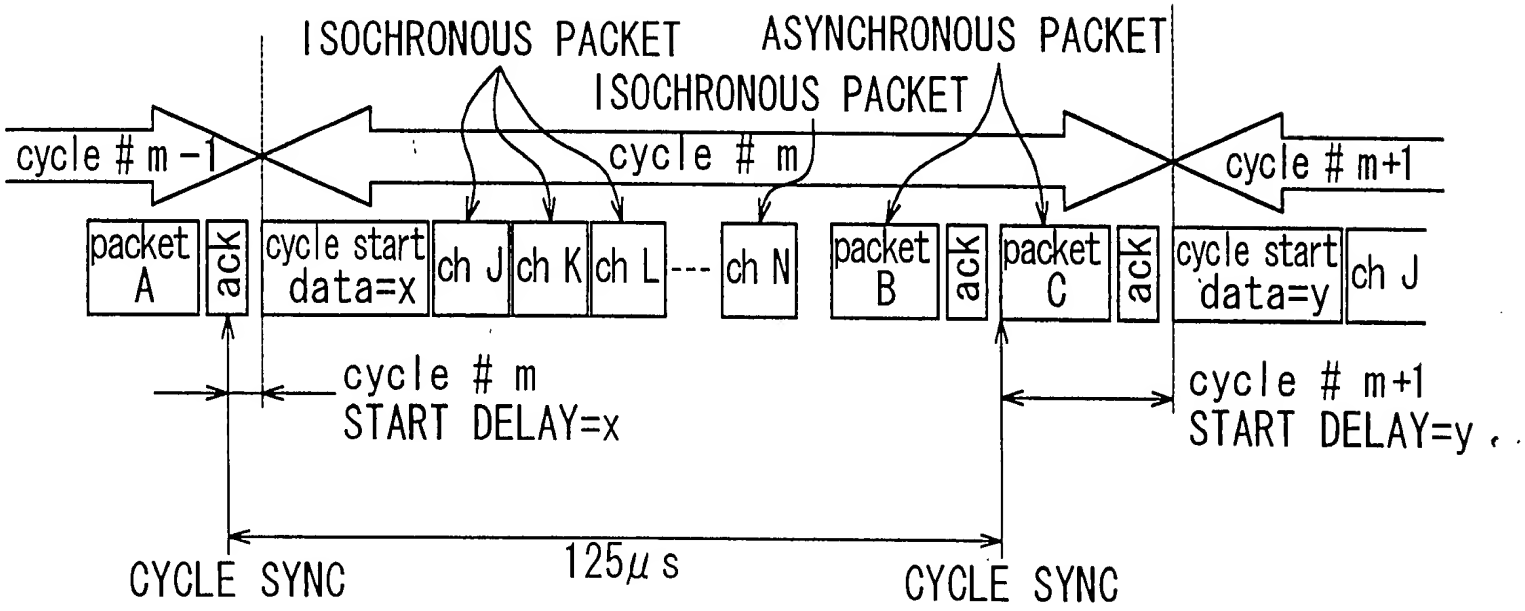

ISOCHRONOUS PACKET
ASYNCHRONOUS PACKET
ISOCHRONOUS PACKET
cycle # m-1
cycle # m
cycle # m+1
packet A
ack
cycle start data=x
ch J
ch K
ch L
---
ch N
packet B
ack
packet C
ack
cycle start data=y
ch J
cycle # m START DELAY=x
cycle # m+1 START DELAY=y
125μs
CYCLE SYNC
CYCLE SYNC

FIG. 3

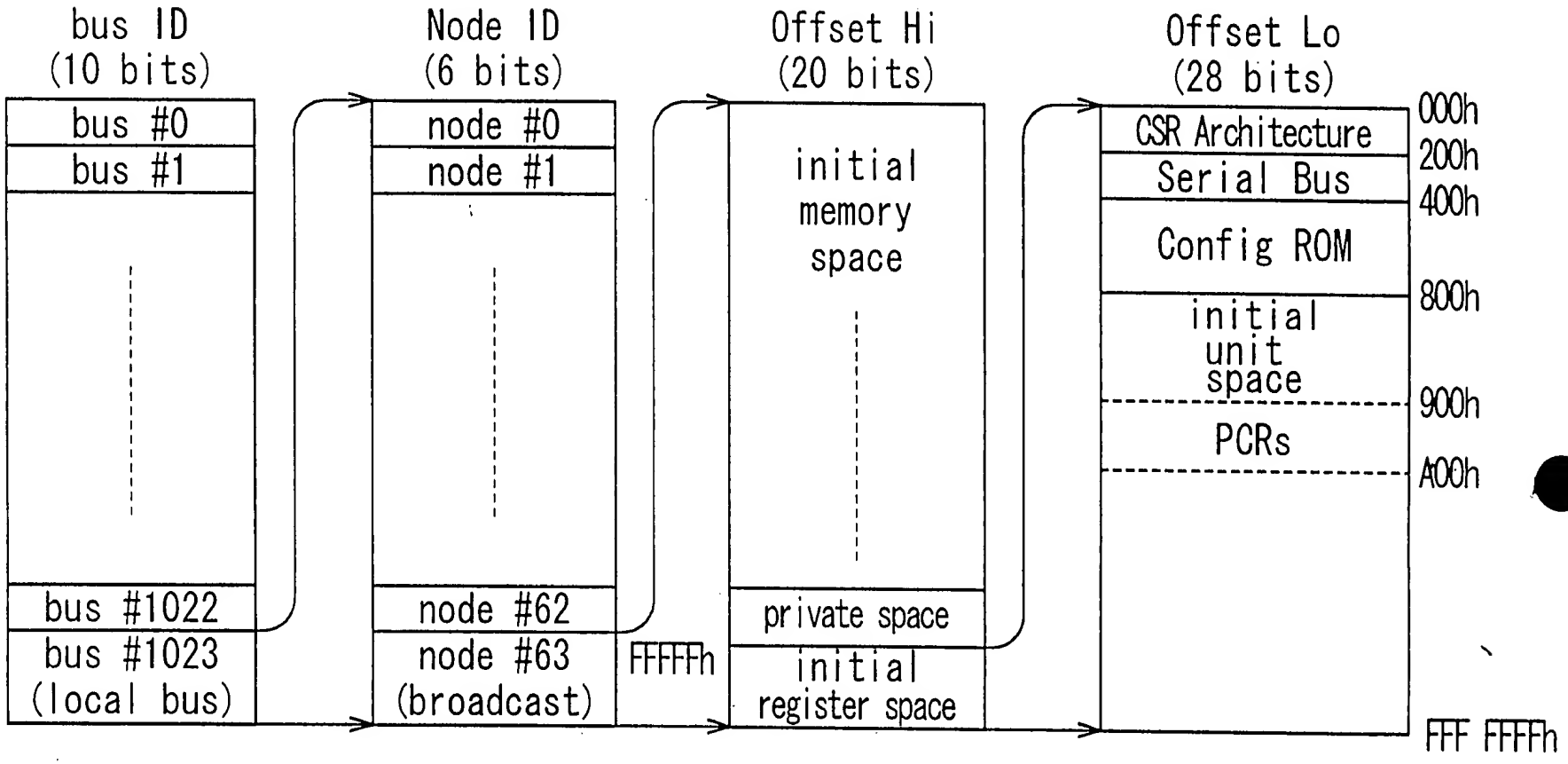

bus ID
(10 bits)
bus #0
bus #1
bus #1022
bus #1023
(local bus)
Node ID
(6 bits)
node #0
node #1
node #62
node #63
(broadcast)
FFFFFh
Offset Hi
(20 bits)
initial
memory
space
private space
initial
register space
Offset Lo
(28 bits)
CSR Architecture
Serial Bus
Config ROM
initial
unit
space
PCRs
000h
200h
400h
800h
900h
A00h
FFF FFFFh

FIG. 4

OFFSETS	NAMES	FUNCTIONS
000h	STATE_CLEAR	STATE AND CONTROL INFORMATION
004h	STATE_SET	SET STATE_CLEAR BIT
008h	NODE_IDs	INDICATE 16-BIT NODE ID
00Ch	RESET_START	START COMMAND RESET
018h-01Ch	SPLIT_TIMEOUT	PRESCRIBE MAXIMUM TIME OF SPLIT
200h	CYCLE_TIME	CYCLE TIME
210h	BUSY_TIMEOUT	PRESCRIBE LIMIT OF RETRY
21Ch	BUS_MANAGER	INDICATE BUS MANAGER ID
220h	BANDWIDTH_AVAILABLE	INDICATE BANDWIDTH THAT CAN BE ASSIGNED TO ISOCHRONOUS COMMUNICATION
224h-228h	CHANNELS_AVAILABLE	INDICATE USED STATE OF EACH CHANNEL

FIG. 5

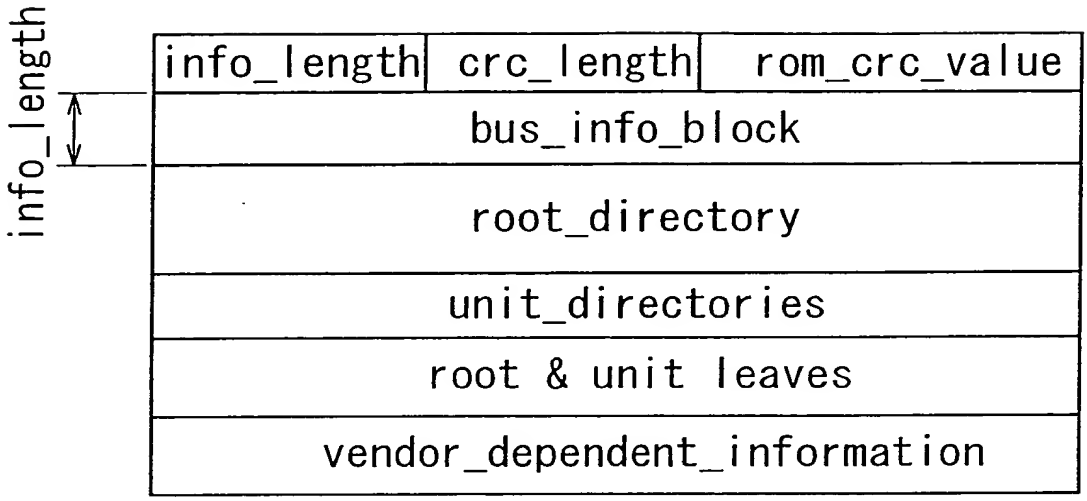

info_length
info_length
crc_length
rom_crc_value
bus_info_block
root_directory
unit_directories
root & unit leaves
vendor_dependent_information

FIG. 6

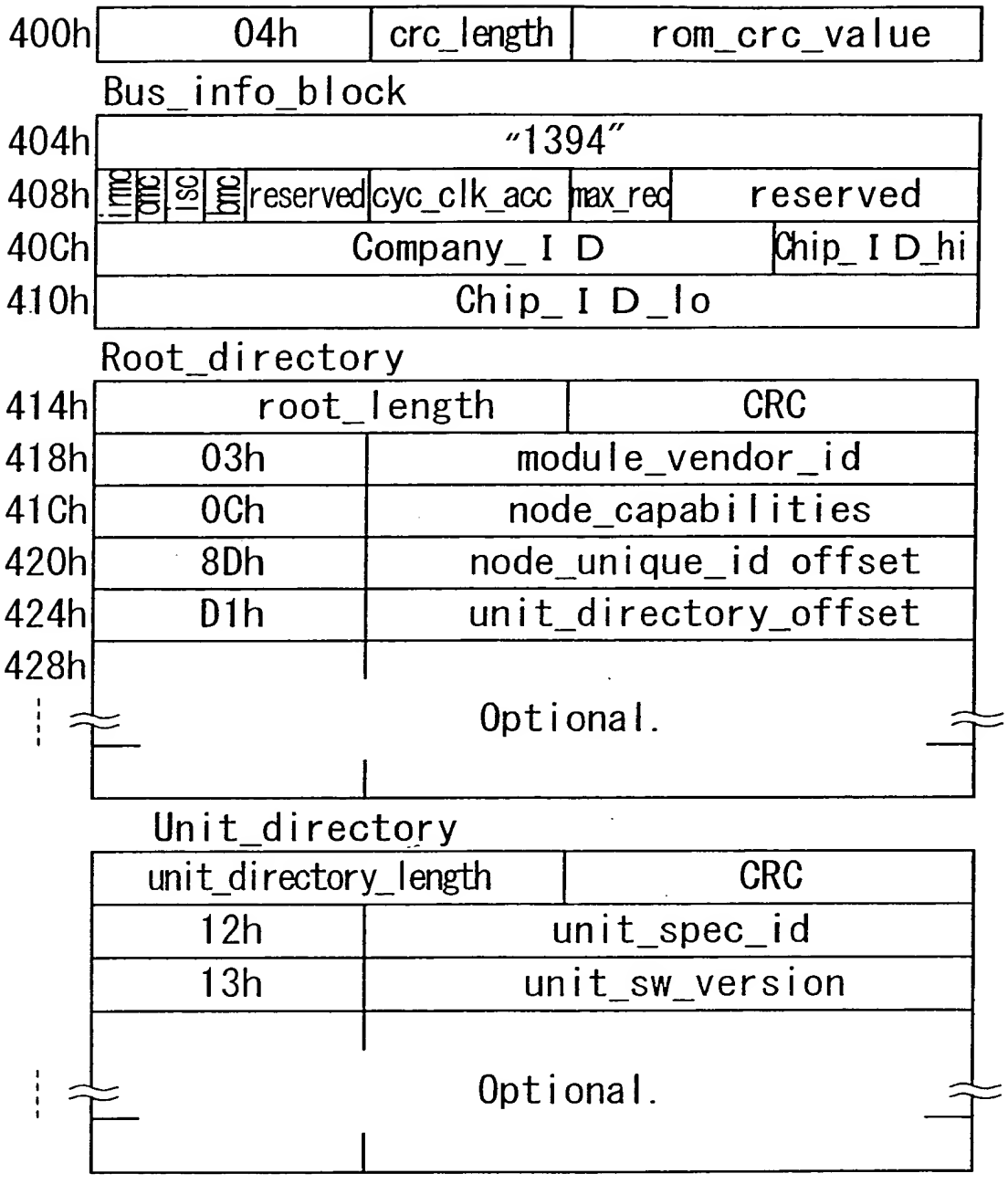

400h
04h
crc_length
rom_crc_value
Bus_info_block
404h
"1394"
408h
irmc
cmc
isc
bmc
reserved
cyc_clk_acc
max_rec
reserved
40Ch
Company_ I D
Chip_ I D_hi
410h
Chip_ I D_lo
Root_directory
414h
root_length
CRC
418h
03h
module_vendor_id
41Ch
0Ch
node_capabilities
420h
8Dh
node_unique_id offset
424h
D1h
unit_directory_offset
428h
Optional.
Unit_directory
unit_directory_length
CRC
12h
unit_spec_id
13h
unit_sw_version
Optional.

FIG. 7

900h	Output Master Plug Register
904h	Output Plug Control Register #0
908h	Output Plug Control Register #1
⋮	⋮
97Ch	Output Plug Control Register #30
980h	Input Master Plug Register
984h	Input Plug Control Register #0
988h	Input Plug Control Register #1
⋮	⋮
9FCh	Input Plug Control Register #30

FIG. 8

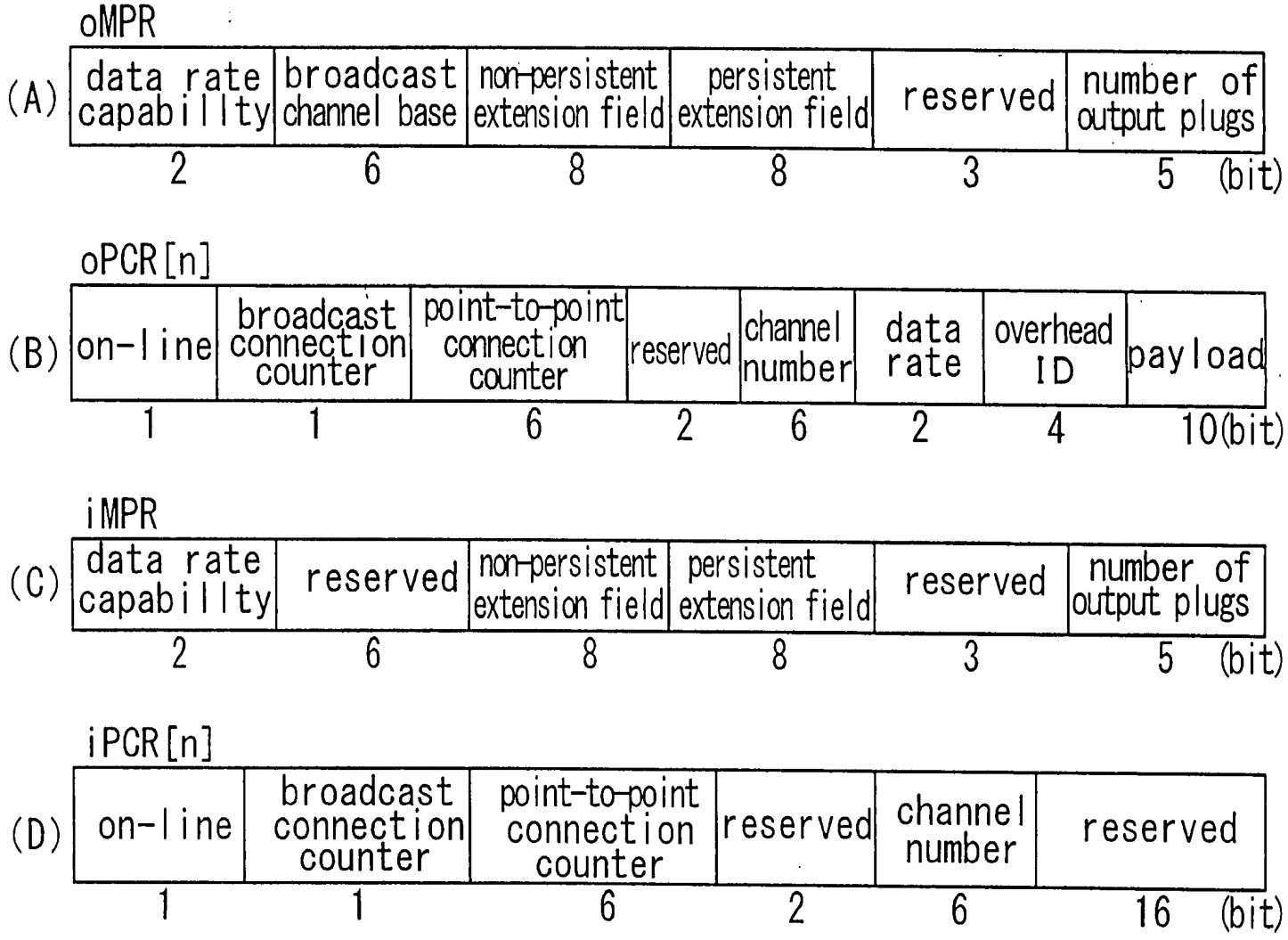
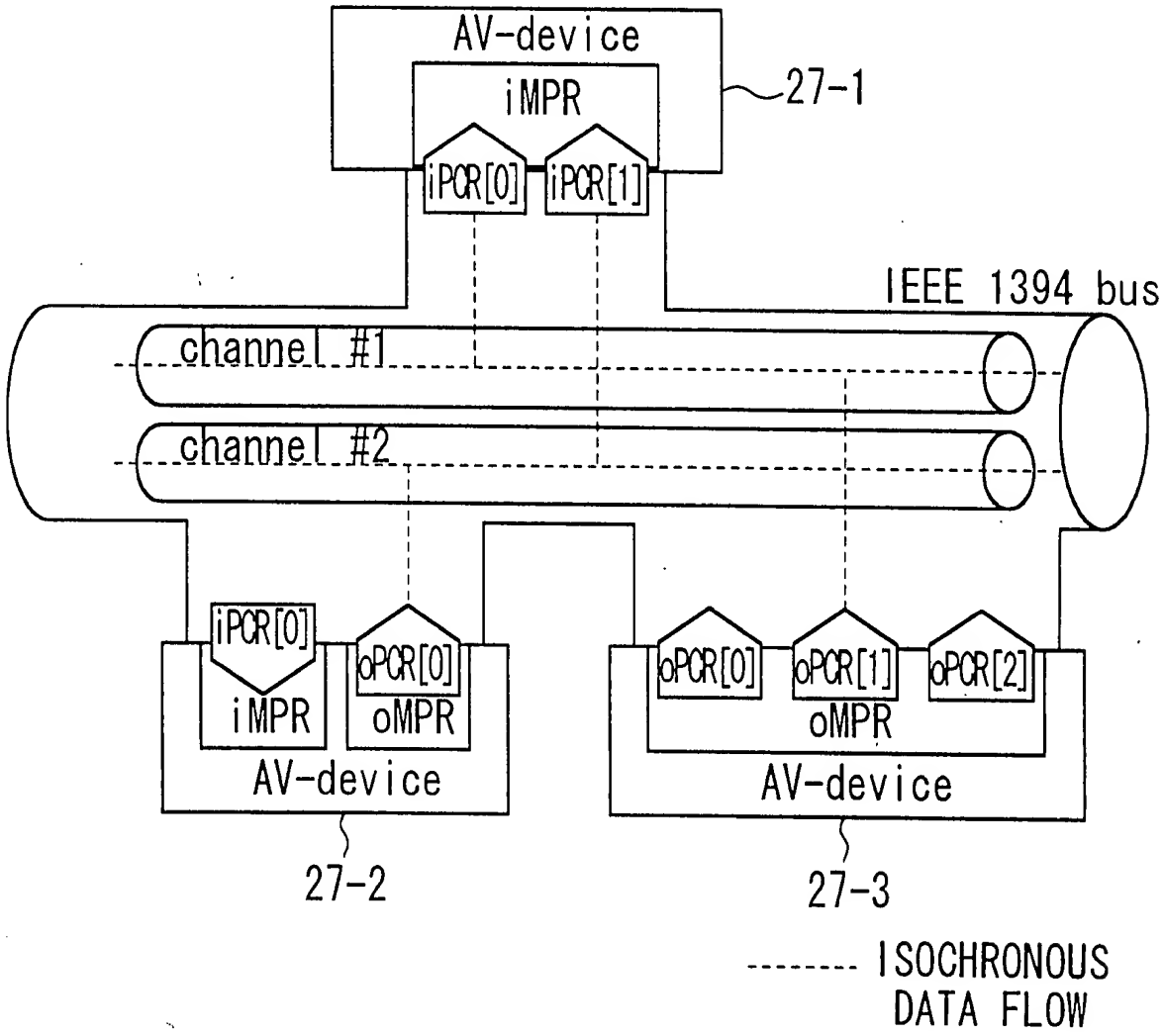

oMPR
(A)
data rate capabillty
broadcast channel base
non-persistent extension field
persistent extension field
reserved
number of output plugs
2
6
8
8
3
5
(bit)
oPCR[n]
(B)
on-line
broadcast connection counter
point-to-point connection counter
reserved
channel number
data rate
overhead ID
payload
1
1
6
2
6
2
4
10(bit)
iMPR
(C)
data rate capabillty
reserved
non-persistent extension field
persistent extension field
reserved
number of output plugs
2
6
8
8
3
5
(bit)
iPCR[n]
(D)
on-line
broadcast connection counter
point-to-point connection counter
reserved
channel number
reserved
1
1
6
2
6
16
(bit)

FIG. 9


AV-device
iMPR
27-1
iPCR[0]
iPCR[1]
IEEE 1394 bus
channel #1
channel #2
iPCR[0]
oPCR[0]
iMPR
oMPR
AV-device
27-2
oPCR[0]
oPCR[1]
oPCR[2]
oMPR
AV-device
27-3
ISOCHRONOUS DATA FLOW

08E760 E22F9960

FIG. 10

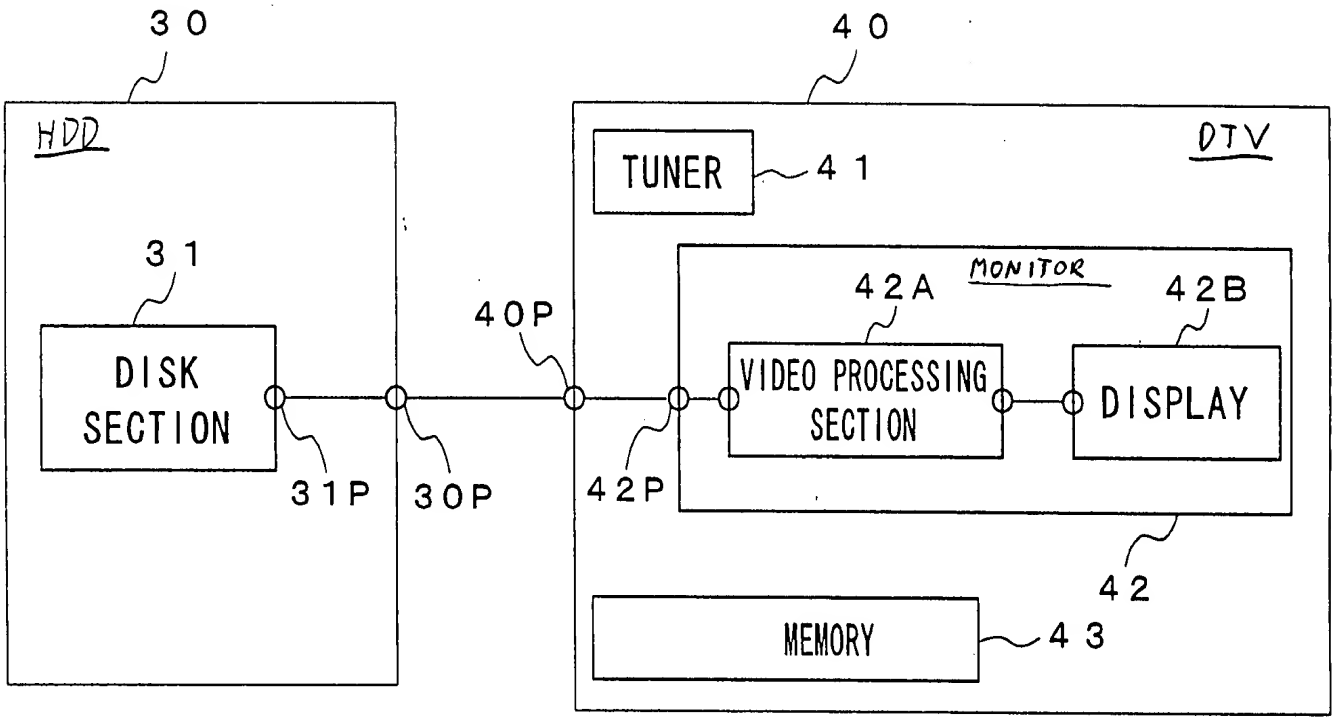


FIG. 11

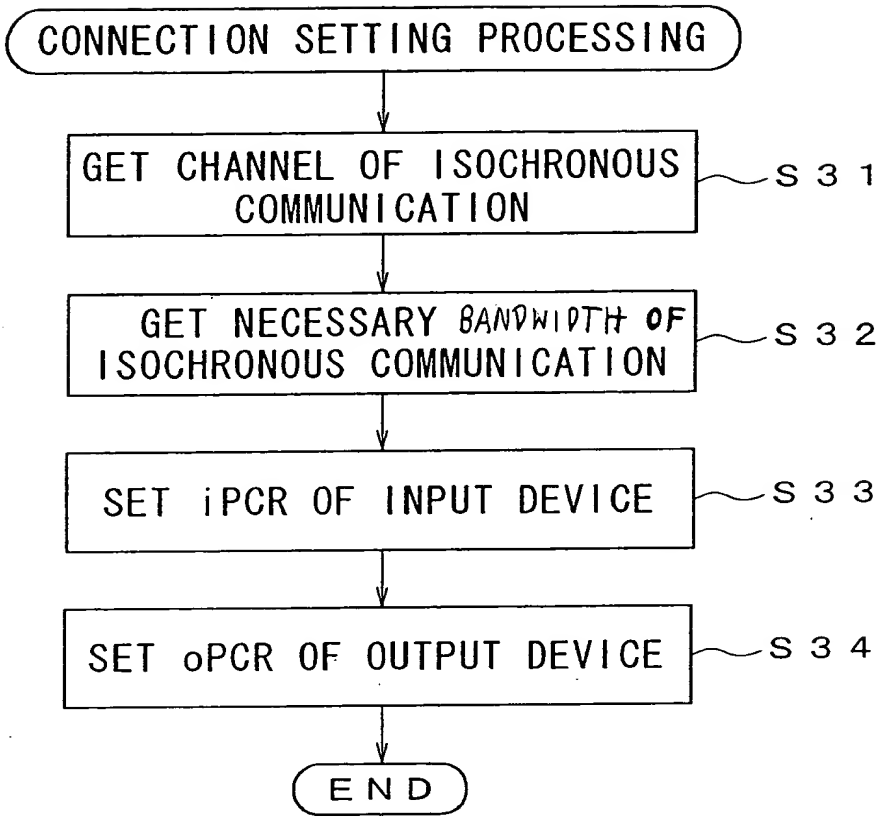
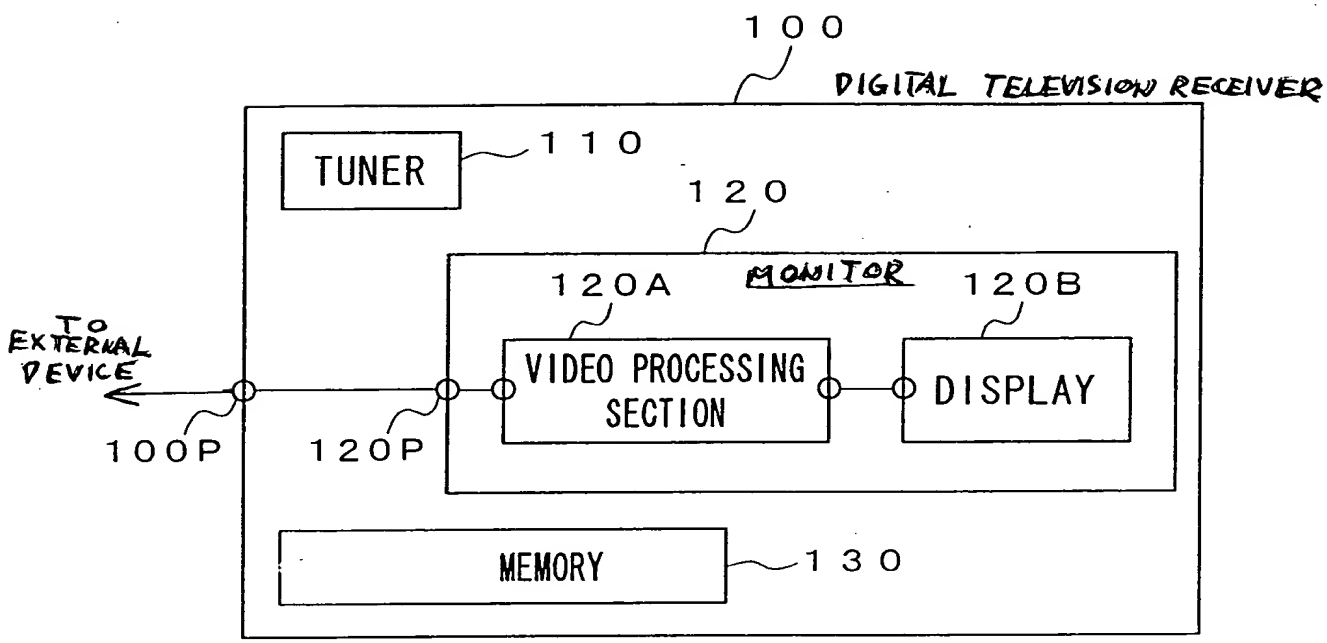

CONNECTION SETTING PROCESSING
GET CHANNEL OF ISOCHRONOUS COMMUNICATION
S31
GET NECESSARY BANDWIDTH OF ISOCHRONOUS COMMUNICATION
S32
SET iPCR OF INPUT DEVICE
S33
SET oPCR OF OUTPUT DEVICE
S34
END

FIG. 12

Monitor Subunit dependent information	
Address offset	Contents
0000_{16}	Subunit_dependent_length=33bytes
0001_{16}	
	Datastructure_type=Monitor subunit dependent information
	Audio_subunit_version=FF(hex)
	Monitor_subunit_version=10(hex)
	Number_of_configuration_dependent_information=1
	Configuration_dependent_length=26bytes
	Datastructure_type=Configuration_Information
	Config_ID=1
	Master_cluster_information
	Number_of_source_plug=0
	number_of_fb_dependent_information=2
	fb_dependent_length=10bytes
	Datastructure_type=FB_dependent_information
	fb_type=video_feature
	fb_ID=1
	fb_name=FF
	number_of_destination_plug=1
	Source_ID(1)=subunit destination plug 1
	cluster_information=same as up stream
	fb_dependent_length=10bytes
	Datastructure_type=FB_dependent_information
	fb_type=display
	fb_ID=2
	fb_name=FF
	number_of_destination_plug=1
	Source_ID(1)=fb_type;video feature, fb_ID;1
	cluster_information=none

FIG. 13 (RELATED ART)



00E760 E221960

FIG. 14 (RELATED ART)

Monitor Subunit dependent information	
Address offset	Contents
0000_{16}	Subunit_dependent_length=25bytes
0001_{16}	
	Datastructure_type=Monitor subunit dependent information
	Audio_subunit_version=FF(hex)
	Monitor_subunit_version=10(hex)
	Number_of_configuration_dependent_information=1
	Configuration_dependent_length=19bytes
	Datastructure_type=Configuration_Information
	Config_ID=1
	Master_cluster_information
	Number_of_source_plug=0
	Number_of_fb_dependent_information=1
	fb_dependent_length=10bytes
	Datastructure_type=FB_dependent_information
	fb_type=video_feature
	fb_ID=1
	fb_name=FF
	Number_of_destination_plug=1
	Source_ID(1)=subunit destination plug 1
	cluster_information=same as up stream